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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/656,325
Filing Date: September 06, 2000
Appellant(s): NELSON ET AL.

Michael A. Oblon
For Appellant

EXAMINER'S ANSWER

This is a supplemental response to the appeal brief filed 05/29/2008 and 10/06/2008
(supplemental) appealing from the Office action mailed 10/30/2007. This response includes

rejections of claims inadvertently left out in the previous examiner's answer mailed 02/09/2009. Additionally, the instant examiner's answer has been re-written to correspond to the final Office action mailed 10/30/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,894,103	SHANN	4-1999
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6,584,907	BOUCHER	7-2003
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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means by which the bus interface senses the analog condition of a network and the means by which a logic device determines that the bus interface senses the analog condition must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to under 37 CFR § 1.71 (a). The specification must include:

a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

The specification fails to enable one having ordinary skill in the art to make or use the disclosed invention because it does not make clear how or in what manner the bus interface "senses" the analog condition of the network nor how a logic device determines that the bus interface has sensed the analog condition. Applicant has disclosed in the specification that bus interfaces are known in the art. Applicant also argues that the claimed bus interface is different than that admitted to be prior art. If this is the case then it is incumbent upon the applicant to disclose how or in what manner the claimed bus interface differs. To state what one of ordinary skill in the art would have known, without proof of such knowledge, is insufficient.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 91-100 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 91 requires that a bus interface sense an analog condition of a network. Neither the applicant's specification nor drawings describe how or in what manner this is accomplished. In the specification, applicant admits that a bus interface is known in the art. However, at no point in the specification does the applicant attempt to distinguish what was admitted to be known from that which is alleged to be new. This amounts to a failing under 35 USC 112, first paragraph because the applicant has not enabled one having ordinary skill in the art to make or use the claimed invention. The examiner has considered applicant's affidavit, especially paragraph 13 which states that one having ordinary skill in the art would have been able to make and/or use the claimed invention. This is a statement of conclusion and not evidence. In *re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991) ("expert's opinion on the ultimate legal conclusion must be supported by something more than a conclusory statement"). Moreover, if the applicant insists that the claimed bus interface is different from that admitted as known in the art then the applicant is requested to prove that the admitted prior art bus interface does not possess the alleged capabilities of sensing an analog condition of a network. In *re Best, Bolton, and Shaw*, 562 F.2d 1252, 195 USPQ 430, 433 (CCPA 1977).

I. ELECTRICAL AND MECHANICAL DEVICES OR PROCESSES

For example, a disclosure of an electrical circuit apparatus, depicted in the drawings by block diagrams with functional labels, was held to be nonenabling in *In re Gunn*, 537 F.2d 1123, 1129, 190 USPQ 402, 406 (CCPA 1976). There was no indication in the specification as to whether the parts represented by boxes were “off the shelf” or must be specifically constructed or modified for applicant’s system. Also there were no details in the specification of how the parts should be interconnected, timed and controlled so as to obtain the specific operations desired by the applicant. In *In re Donohue*, 550 F.2d 1269, 193 USPQ 136 (CCPA 1977), the lack of enablement was caused by lack of information in the specification about a single block labelled “LOGIC” in the drawings. See also *Union Pacific Resources Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 57 USPQ2d 1293 (Fed. Cir. 2001) (Claims directed to a method of determining the location of a horizontal borehole in the earth failed to comply with enablement requirement of 35 U.S.C. 112 because certain computer programming details used to perform claimed method were not disclosed in the specification, and the record showed that a person of skill in art would not understand how to “compare” or “rescale” data as recited in the claims in order to perform the claimed method.).

In *re Ghiron*, 442 F.2d 985, 169 USPQ 723 (CCPA 1971), involved a method of facilitating transfers from one subset of program instructions to another which required modification of prior art “overlap mode” computers. The Board rejected the claims on the basis, *inter alia*, that the disclosure was insufficient to satisfy the requirements of 35 U.S.C. 112, first paragraph and was affirmed. The Board focused on the fact that the drawings were “block diagrams, i.e., a group of rectangles representing the elements of

the system, functionally labeled and interconnected by lines.” 442 F.2d at 991, 169 USPQ at 727. The specification did not particularly identify each of the elements represented by the blocks or the relationship there between, nor did it specify particular apparatus intended to carry out each function. The Board further questioned whether the selection and assembly of the required components could be carried out routinely by persons of ordinary skill in the art. An adequate disclosure of a device may require details of how complex components are constructed and perform the desired function. The claim before the court in *In re Scarbrough*, 500 F.2d 560, 182 USPQ 298 (CCPA 1974) was directed to a system which comprised several component parts (e.g., computer, timing and control mechanism, A/D converter, etc.) only by generic name and overall ultimate function. The court concluded that there was not an enabling disclosure because the specification did not describe how “complex elements known to perform broadly recited functions in different systems would be adaptable for use in Appellant’s particular system with only a reasonable amount of experimentation” and that “an unreasonable amount of work would be required to arrive at the detailed relationships appellant says that he has solved.” 500 F.2d at 566, 182 USPQ at 302.

Brief Discussion of US 6584907 issued to Boucher et al. (hereinafter "Boucher")

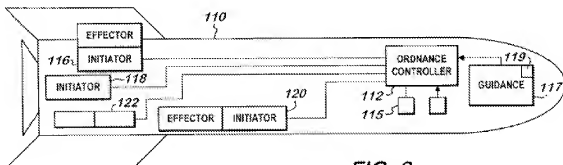


FIG. 6

(PRIOR ART)

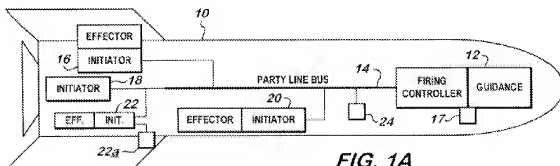


FIG. 1A

Generally, Boucher is directed to an Ordnance Firing System that utilizes a single party bus line 14 provide communication between a firing control system 12 and a plurality of initiators 16, 18, 20, 22. A partial description of the ordnance system above can be found at column 6, lines 58-64 of the specification as follows:

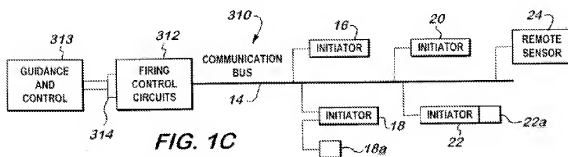
FIG. 1A provides a schematic illustration of a missile 10 equipped with an ordnance firing system in accordance with the present invention. The ordnance firing system comprises a firing control system 12, a communication bus 14, and a plurality of initiators 16, 18, 20, 22 for reactive effectors on the device. The initiators are connected to the bus 14 and a remote sensor 24 is also connected to bus 14.

Boucher goes on to further describe the features of the “intelligent initiators” which include an *address code* that allows the firing control system 12 to communicate with any one or all of the initiators 16, 18, 20 and 22. The *address* code allows the firing control system to *talk* to a specific initiator in spite of the fact that only a single party bus line is used. Additionally, the initiators 16, 18, 20 and 22 may *talk* to the firing control system using the same code. The relevant portion of the specification describing these features can be found at column 9, line 36 to column 10, line 17 as follows:

Referring again to FIG. 1A, another feature of the ordinance firing system of this invention is the use of a multi-line party bus for establishing communication between the firing control system circuitry and the various initiators. This feature provides advantages irrespective of whether an initiation system employs planar, low-energy initiators and a low-energy power source. According to this feature, initiators 16, 18, 20 and 22 each contain communication circuitry for receiving and evaluating signals received via communication bus 14 from firing control system 12 or, optionally, at least one remote sensor 24. Since all of the initiators are connected to the same communication bus 14, they all receive each of the signals issued by firing control system 12. However, in accordance with the present invention, initiators 16, 18, etc., contain initiator firing circuits that are programmed to recognize an address portion of signals received on communication bus 14. The initiator firing circuit is programmed only to respond to those signals that contain an address code identified with that initiator. The address code may constitute a specific address unique in the system to that initiator; it may be a "shared" address also recognized by some other initiators in the system but not all of them, or it may be a "universal" address which all initiators connected to bus 14 recognize. Firing control system 12 and remote sensor 24 are configured to emit signals that contain the appropriate address codes so that the signals will be recognized and acted upon by the appropriate initiators. As a result of the use of coded signals, initiators 16, 18, etc., may be connected to shared wires in communication bus 14 and bus 14 may therefore comprise merely two or three communication wires. A four-wire bus might be used as well, to provide separate wires for arming power,

operation power, communication and ground. Similarly, initiators 16, 18, etc., may optionally be configured to generate and emit initiator signals onto communication bus 14. Firing control system 12 may be designed to receive and interpret initiator signals received via bus 14. The signal emitted by an initiator may contain an identifier code that is unique to the issuing initiator so that the firing control system can distinguish among signals from the various initiators. Accordingly, one feature of the present invention is that firing control system 12 and initiators 16, 18, etc., are configured for two-way communication along bus 14. This feature of the invention allows for an ordnance firing system in which initiators can provide feedback to the control unit along the bus. The ordnance firing system can be configured so that, prior to a firing sequence, the firing control system unit issues a query signal to one or more initiators and the initiators respond to indicate their readiness to function.

Boucher goes on to further describe a feature important to this appeal: the ability of the initiators to provide control over the firing process of the ordnance firing system through the use of sensors to detect external and internal conditions. A general discussion of these features begins at column 11, line 38 but the more relevant portion of the disclosure begins at column 12, line 31 which describes internal sensor 22a which is attached to the initiator as shown below.



indicates favorable conditions. Similarly, initiator 22 is responsive not only to signals from firing control system 12 but also to an internal sensor 22a which may sense conditions inside the initiator shell. Such internal conditions may include the condition of the firing circuitry of initiator 22, the condition of the output charge of initiator 22, etc. Other relevant internal conditions that might be reported by sensor 22a include temperature, voltages, frequencies, current draw, initiation element continuity, etc. If a firing signal is received from firing control system 12 but the requisite signal is not received from the sensor 22a, initiator 22 may optionally be programmed to postpone firing despite the firing signal from firing control system 12. Sensor 22a may thus provide a built-in test function for manufacturing quality as well as field reliability.

The internal sensor detects conditions such as *voltages, frequencies* and *current draw* and acts as a condition precedent to the firing of the device. As will be discussed later, this receipt of internal information and the decision process that follows can be performed prior to receipt of either the arming or firing signal.

In one embodiment of the invention, Boucher discloses "time-phased arming" in which the firing capacitor is armed through a series of arming signals sent to the initiators. However, this is only one optional means by which the firing capacitor is armed (charged).

In the embodiment of Figure 5, Boucher discloses an initiator 16c connected to party line bus 14 which is ultimately connected to a firing controller 12 as described above. The initiator includes several components but some of the more important ones are the data communication circuit 52, initiator control circuit 54, internal sensor 56, arming switch 28 and energy storage capacitor 26.

Discussion of the embodiment of Figure 5 begins at column 15, line 46 as follows:

There is shown in FIG. 5 an initiator 16c in accordance with a specific embodiment of the present invention. Initiator 16c is joined to a party line bus 14. Signals received from the firing control system via bus 14 pass through several buffer devices including common mode EMI (electromagnetic interference) filter 44, high impedance isolators 46 and over-voltage clamp 48. EMI filter 44 provides protection against susceptibility to random electromagnetic signals that may be inadvertently conveyed along bus 14. Impedance isolators 46 limit the energy that can be received from bus 14 for use by the remainder of the initiator circuit.

A signal that meets the requirements of the buffer provided by EMI filter 44, isolators 46 and clamp 48 is then conveyed to arming switch 28, power supply circuit 50 and data communication circuit 52. An initiator control circuit 54 receives input from data communication circuit 52 and power supply 50 as well as status information from energy storage (e.g., capacitor) 26 and the initiation element, e.g., semiconductor bridge 42a. When the proper input signals are received from these sources, initiator control circuit 54 may issue an arming signal. In the illustrated embodiment,

the arming signal is received by a logic gate 54a which also receives input from an internal sensor 56. If the output of internal sensor 56 is appropriate for the operation of arming switch 28, logic gate 54a may convey the control arming signal from control circuit 54 to arming switch 28, through which a charging voltage may be applied to the energy storage device, i.e., a firing capacitor 26. Optionally, charging may occur in a set fashion as described in connection with FIGS. 2 and 3. When the initiating element is a semiconductor bridge, the energy requirement for initiation is substantially smaller than in prior art devices, so firing capacitor 26, which may typically be sized to release only 5 millijoules, may be employed for a 1-ohm SCB, obviating the need for a battery as would be required by prior art devices. When appropriate signals are received, control circuit 54 may issue a control firing signal for firing switch 58. In the illustrated embodiment, an optional logic gate 54b compares the control firing signal to the output of an environmental sensor 18a and only conveys the control firing signal to the firing switch when the environmental sensor 18a indicates that conditions are appropriate for firing. The closure of firing switch 58 permits the discharge of firing capacitor 26 through the semiconductor bridge 42a or other initiation element, thus initiating the device.

In addition to providing input to logic gates 54a and 54b, internal sensor 56 and external sensor 18a may provide signals directly to initiator control circuit 54 and/or data communication circuit 52 so that initiator 16c can perform a self-test for readiness prior to the receipt of an arming or firing signal from party line bus 14. Optionally, the self test can be performed in response to a query signal received from bus 14 and the results may be reported in a response signal emitted along bus 14.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 91, 92, 94, 95 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over the embodiment of Fig. 5 of US 6584907 issued to Boucher in view of the embodiment of Fig. 1A and in further view of US 4860653 issued to Abouv and in further view of applicant's admission. The embodiment of Fig. 5 discloses a networked electronic ordnance system, comprising:

- a. a bus controller 12
 - the bus controller 12 provides digital arming and firing commands to pyrotechnic devices via network 14, each command is in *address* form and includes a code (unique identifier). Refer back to a discussion of the addressing scheme starting at pg. 9, line 46 of the specification.
 - the bus controller works in conjunction with power source 17 to arm a capacitor in the pyrotechnic device.
- b. a plurality of pyrotechnic devices 16, 18, 20, 22 connected to network 14 by bus controller 12, the pyrotechnic device 16c, comprising:
 - i. a bus interface 56:
 - element 56 is disclosed as being an internal sensor.
 - in a general discussion of the operation of the ordnance device, the specification disclosed internal sensors (22a) as being capable of sensing conditions such as *voltages, frequencies* and *current draw*, this qualifying element 56 as a bus interface.
 - while the examiner used the applicant's admission that bus interfaces were well known in the art, it has been determined that this admission

is no longer necessary because the internal sensor performs the claimed functions.

- ii. an energy storage capacitor 26;
- iii. an initiator 42a;
- iv. a logic device 54
 - as disclosed by the specification, each initiator is "programmed" with an address code (col. 9, ll. 52-56).
 - according to the embodiment of Fig. 5, if conditions are proper, logic device 54 will issue an arming (charging) signal that "stores activation energy in the capacitor" as claimed by the applicant. (Col. 15, ll. 65-67).
 - the decision to fire is based on conditions precedent: 1) a properly coded firing signal from the bus controller (col. 16, ll. 15-17, "appropriate signals" refers in part to the coded firing command from the controller 12); and 2) internal and external conditions (col. 16, ll. 17-33) are received from external sensor 18a and internal sensor 56, transferred to logic gates 54a,b which then compares the conditions to the firing signal. Recall that internal sensors can measure *voltages, frequencies and current draw* (col. 12, ll. 36-39).

In the embodiment of Fig. 5, unique identifiers are not disclosed as being used.

However, the embodiment of Fig. 1A discloses such a feature. Specifically, Fig. 1A discloses initiator devices that are programmed to respond "those signals that contain

an address code identified with that initiator." (Col. 9, ll. 49-59). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the embodiment of Fig. 5 with the unique address features of Fig. 1A. The suggestion/motivation for doing so would have been to provide for the ability to address specific initiators and increase safety.

While Boucher appears to identify a bus interface as discussed above, it is not clear whether it corresponds to applicant's admitted bus interface in view of the rejections under 35 USC 112, first paragraph. Applicant's specification (pg. 7, ll. 10-14) describes a bus interface and provides that such an interface is well known to those skilled in the art. The examiner accepts this admission and further provides that it would have been obvious to provide the combined device of Boucher and Abouv with such a well-known electronic component. The suggestion/motivation for doing so would have been to have signals intercepted and evaluated before being passed on to the electrical components stored within the pyrotechnic initiator. A bus interface intercepts and passes on signals to a processor in which it is connected. Therefore, it is inherent that a processor connected to a bus interface would determine that the interface received information. If the combined device as discussed above sent an arm signal and simultaneously altered the analog condition of the network to a voltage necessary to charge the capacitors, then would be necessary to pass through the gatekeeper known as the bus interface before any signals traveled to the rest of the device.

3. Claim 93 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher, Abouv and applicant's admission as applied to claim 91 above, and further in view of Shann. Neither of the combined references disclose a disarm command. Shann discloses an abort command that

can be issued to discharge energy stored in a capacitor when it is no longer desired to fire an ordnance device (col. 4, ll. 50-59).

4. Claim 96 rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher, Abouv, applicant's admission and Shann and in further view of US 4674047 issued to Tyler. Boucher, Abouv, applicant's admission and Shann disclose a networked electronic ordnance device as described above. However, neither appears to disclose the disarmed status transmitted by the pyrotechnic device. Tyler discloses a computer controlled electronic ordnance system in which status checks such as arming, power storage, disarming, or power-down etc., are performed (col. 8, ll. 23-33). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the combined pyrotechnic device of Boucher, Abouv, applicant's admission and Shann with the status identification features of Tyler. The suggestion/motivation for doing so would have been to allow an operator to have interaction between the main firing console and the various pyrotechnic initiators.

5. Claims 98, 99 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher, Abouv and applicant's admission and in further view of US 4674047 issued to Tyler. Boucher, Abouv and applicant's admission disclose a networked electronic ordnance device as described above. However, neither appears to disclose the disarmed status transmitted by the pyrotechnic device. Tyler discloses a computer controlled electronic ordnance system in which status checks such as arming, power storage, disarming, or power-down etc., are performed (col. 8, ll. 23-33). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the combined pyrotechnic device of Boucher, Abouv and applicant's admission with the status identification features of Tyler. The suggestion/motivation for doing

so would have been to allow an operator to have interaction between the main firing console and the various pyrotechnic initiators.

2. Claims 101, 102 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher in view of the embodiment of Fig. 1A and in further view of US 5894103 issued to Shann. Specifically, Boucher discloses the bus controller 12 for transmitting operational signals using a unique code; a plurality of pyrotechnic devices 16, 18, 20, 22 connected to network 14, the pyrotechnic device 16c comprising an initiator 42a and a logic device having a unique identifier. (Refer to the rejection of claim 91 for specifics).

In the embodiment of Fig. 5, unique identifiers are not disclosed as being used. However, the embodiment of Fig. 1A discloses such a feature. Specifically, Fig. 1A discloses initiator devices that are programmed to respond "those signals that contain an address code identified with that initiator." (Col. 9, ll. 49-59). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the embodiment of Fig. 5 with the unique address features of Fig. 1A. The suggestion/motivation for doing so would have been to provide for the ability to address specific initiators and increase safety.

Boucher does not appear to disclose the disarming command that results in discharging stored activation energy. Shann discloses an abort command that can be issued to discharge energy stored in a capacitor when it is no longer desired to fire an ordnance device (col. 4, ll. 53-59). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the combined device of Boucher with the "abort" feature of Shann. The

suggestion/motivation for doing so would have been to allow a person to disarm the device and cease the firing operation in the event of an emergency.

6. Claims 104-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher and Abouv and Shann and in further view of US 4674047 issued to Tyler. Boucher, Abouv and applicant's admission disclose a networked electronic ordnance device as described above.

However, neither appears to disclose the disarmed status transmitted by the pyrotechnic device. Tyler discloses a computer controlled electronic ordnance system in which status checks such as arming, power storage, disarming, or power-down etc., are performed (col. 8, ll. 23-33). At the time of the invention, one having ordinary skill in the art would have found it obvious to provide the combined pyrotechnic device of Boucher, Abouv and applicant's admission with the status identification features of Tyler. The suggestion/motivation for doing so would have been to allow an operator to have interaction between the main firing console and the various pyrotechnic initiators.

(10) Response to Argument

A. Rejection of claims 91-100 under 35 USC 112, first paragraph.

7. The applicant argues that the specification is not required to describe, in detail, the bus interface and analog conditions because these features are well known in the art. The examiner is aware that known elements and features need not be described. However, patentability of applicant's claims are based, in part, upon those known elements performing allegedly novel functions. The bus interface was described as being "an electronic component that preferably accepts signals from the cable network 204 before those signals are passed further into the

pyrotechnic device." The specification immediately provides that bus interfaces are "well known." There is no further discussion of the bus interface, yet the specification concludes that "the bus interface 312 senses the analog condition of the cable network 312." (Specification, pg. 19, ll. 10-11). When one looks to the drawings, the bus controller 312 is represented by a box 312, which is used to describe conventional features. 37 CFR 1.83(a). In an attempt to explain away the lack of enablement, the applicant relies on an affidavit mailed 08/24/2007. However, regarding the enablement of the bus interface, the affidavit says little and merely reiterates what was disclosed in the specification. As for what one skilled in the art would know, "'It is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention in order to constitute adequate enablement.' Although the knowledge of one skilled in the art is indeed relevant, the novel aspect of an invention must be enabled in the patent." *Auto. Tech. Int'l, Inc. v. BMW of N. Am., Inc.*, 501 F.3d 1274, 1283 84 U.S.P.Q.2d 1108 (Fed. Cir. 2007).

B. Rejection of claim 101-106 under 35 USC 112, second paragraph

8. Withdrawn.

C. Claim 91

9. It should be noted that the applicant's description of the Boucher reference, while correct, is not applicable. On pages 13 and 14 of the Supplemental Appeal Brief received 10/06/2008, the applicant refers to the embodiment of Figure 3 in an attempt to overcome the examiner's rejections. The embodiment of Figure 3 describes a *time-phased* or *stepped* arming (charging) process. However, in the Final Rejection mailed 10/30/2007, the examiner specifically referred to the embodiment of Figure 5. In that embodiment, the Boucher describes an arming process in

which a capacitor is charged once a single arming signal is received by a logic gate and conditions precedents are met. (Col. 15, line 65 to col. 16, line 7). The inventor goes on to say that the *time-phased* manner of arming, as described by the applicant, was an optional means of charging the capacitor. (Col. 16, ll. 7-9).

10. On page 14, last paragraph of the applicant's Brief, it is argued, "In other words, when the firing signal is received, the pyrotechnic device will attempt to initiate the initiation element, but if the capacitor has not been charged sufficiently, it will not work." Again, this argument and conclusion is based on an alternate embodiment of the Boucher invention. As discussed above, when the firing controller of the Boucher ordnance device issues a "fire" signal, the signal is compared to internal 56 and external sensors 18a by logic gates 54a and 54b. (Col. 16, ll. 15-33). Only when conditions are met will the logic gate permit the firing signal to be passed to the firing switch 58.

D. Claim 101

11. Applicant argues that while Shann teaches an abort signal, Shann does not teach an abort signal in combination with a unique identifier. As the applicant has admitted in the Brief, the examiner responded that the unique identifier is provided by Boucher. The examiner repeats that response. Referring to the rejection of claim 101, Boucher teaches every element with the exception of the limitation regarding discharging of stored activation energy upon receipt of a digital disarming command. The only means in which the controller 12 can communicate with the pyrotechnic devices 16, 18, 20 is by means of the address code discussed at column 9, ll. 46-59. To provide a disarming feature, one of ordinary skill in the art would look to Shann and merely program Boucher with an "abort" command and provide the initiator with the necessary

components so that the capacitor 26 can be properly discharged. Shann provides the teaching of how to accomplish this.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Troy Chambers/

Primary Examiner, Art Unit 3641

Conferees:

Timothy D. Collins /TDC/

Michael J. Carone /mjc/